CLAIMS

What is claimed is:

1. An inexpensive, easy to install lining system for a fluid containment vessel comprising:

an outer section having a floor surface and a vertical surface;

an inner section attached to the outer section whereby interstitial space exists between the outer section and the inner section;

wherein a negative pressure exists in the interstitial space of sufficient pressure such that corrosion is reduced.

2. The lining system of claim 1, wherein the interstitial space comprises a generally vertical volume area and a connected generally horizontal volume.

3. The lining system of claim 1, wherein the inner section further comprises at least one L-shaped member having a vertical end and a horizontal end, wherein the horizontal end is connected with the floor surface.

4. The lining system of claim 1, wherein the inner section comprises bottom plates overlaid an original flooring.

5. The lining system of claim 3, wherein inner section further comprises at least one shell skirt attached to the vertical end of the L-shaped member.

6. The lining system of claim 3, wherein the inner section further comprises one or more bottom plates attached to the horizontal end of the L-shaped member.

7. The lining system of claim 5, wherein a top section of the shell skirt is attached to a vertical outer section avoiding a predetermined critical area height of stress.

8. The lining system of claim 6, wherein inner section further comprises a shell skirt attached to the vertical end of the L-shaped member, and the shell skirt and the circumference bottom plate are sealingly attached to the L-shaped member.

9. The lining system of claim 1, wherein the inner section further comprises one or more tank divider plates attached to the floor surface of the horizontal outer section.

10. The lining system of claim 9, wherein the tank divider plate is sealingly attached to the floor surface on one side, and gas permeably attached on another side.

11. The lining system of claim 3, wherein tank divider plate comprises at least one rolled up end, and said divider plate is attached to the outer section.

12. The lining system of claim 11, wherein the divider plate is permeably attached on a first side and sealingly attached on a second side.

13. The lining system of claim 11, wherein the inner section further includes one or more bottom plates sealingly attached to the divider plate.

14. The lining system of claim 13, wherein at least one bottom plate is placed over the divider plate and the horizontal section of a plurality of L-shaped members, whereby at least a portion of the interstitial space is formed.

15. The lining system of claim 3, wherein a sensor is in sensing communication with the interstitial space.

16. The lining system of claim 3, wherein the upper surface of the inner section further comprises a buffer lining for preventing corrosion.

17. The lining system of claim 16, wherein the buffer lining comprises an epoxy matrix.

18. A method of making a storage tank, comprising the steps of:

providing an outer section having vertical surface and a floor surface;

providing a shell skirt to the outer section above a critical height for reducing corrosion and avoiding a high stress height; and

attaching one or more L-shaped members having a vertical end and a horizontal end to the skirt.

19. The method of claim 18, further comprising the step of: providing a divider plate; and attaching bottom plates to the horizontal ends and the divider plate.

20. The method of claim 19, further comprising the steps of:

sealingly attaching one or more divider plates to the floor surface on one side and gas permeably attaching the divider plate on a second side.

21. The method of claim 18, further comprising the step of providing a flushing means for cleaning a leak in the system.

22. A double walled and floored storage tank, comprising:

an outer section; and

an inner section, including:

a shell skirt attached to a vertical portion of the outer section above a critical height;

at least one L-shaped member attached to the skirt; and

a plurality of bottom plates including plates formed from a cost-saving template attached to the L-shaped member whereby an interstitial space is formed;

wherein a high continuous negative pressure is applied to the interstitial spaces.

23. The tank of claim 22, further comprising one or more tank divider plates, whereby the tank is divided into two or more independently sealed sections.

24. A lining system for a fluid containments vessel, comprising:

means for forming an inner layer and an outer layer;

means for forming a negative pressure between the inner layer and outer layer; and

means for dividing the system into two or more independently sealed sections.

25. The system of claim 24, further comprising means for flushing an area below a sealed section.